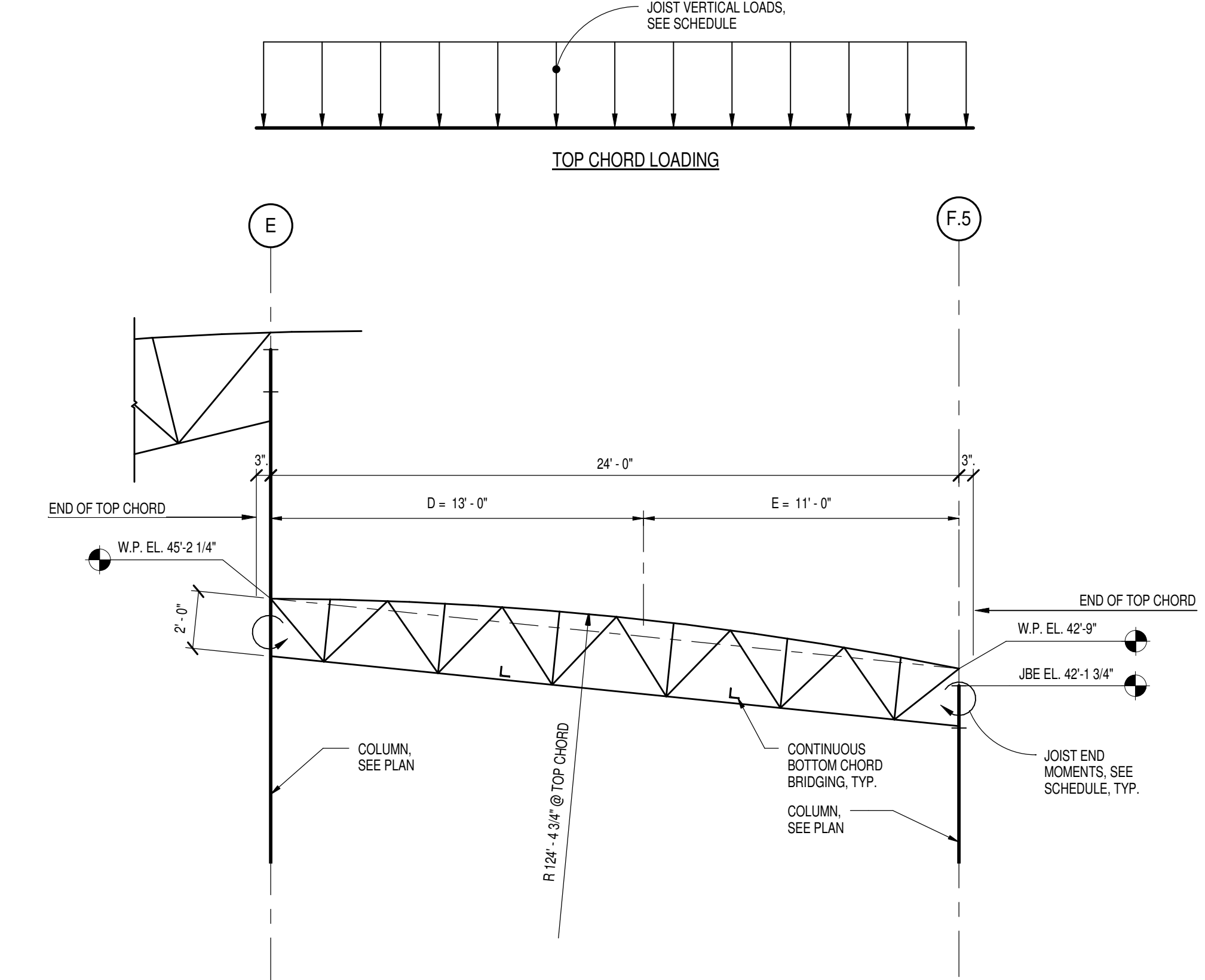
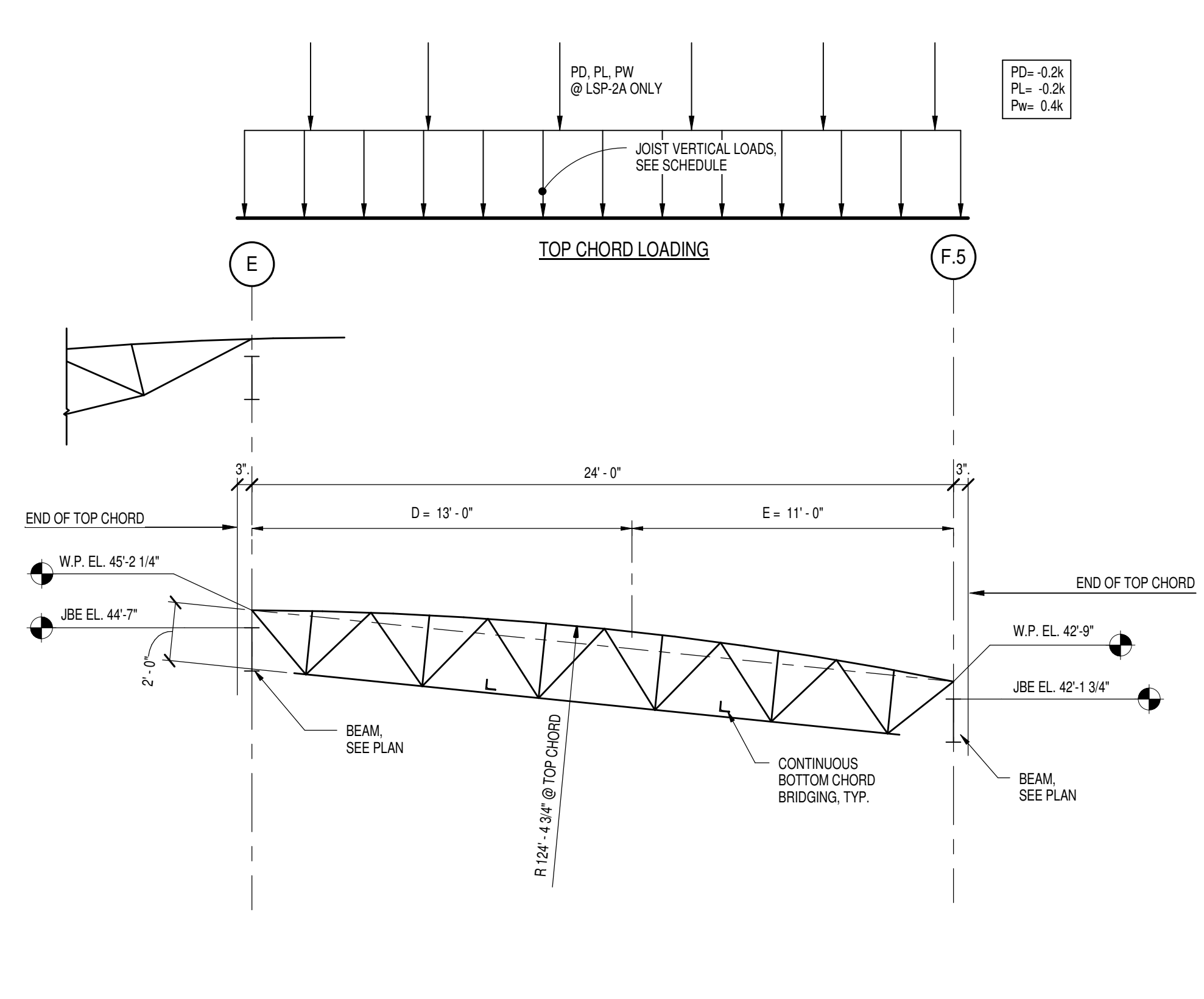


1 PROFILE AND LOAD DIAGRAM FOR ROOF JOIST HSP-10 & HSP-12  
1/4" = 1'-0"

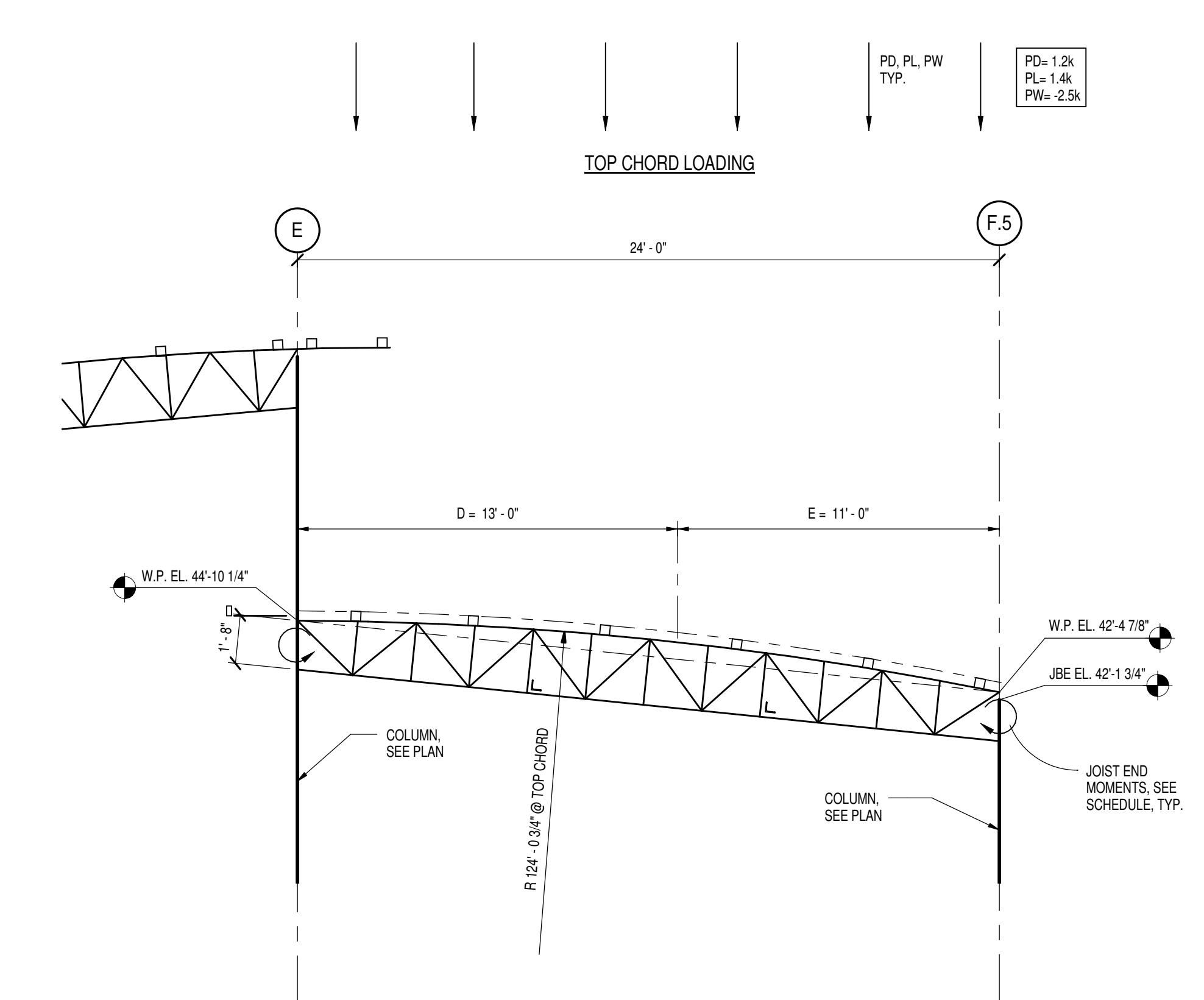
2 PROFILE AND LOAD DIAGRAM FOR ROOF JOIST HSP-11 & HSP-13  
1/4" = 1'-0"



3 PROFILE AND LOAD DIAGRAM FOR ROOF JOIST LSP-1  
1/4" = 1'-0"



4 PROFILE AND LOAD DIAGRAM FOR ROOF JOIST LSP-2, 2A  
1/4" = 1'-0"



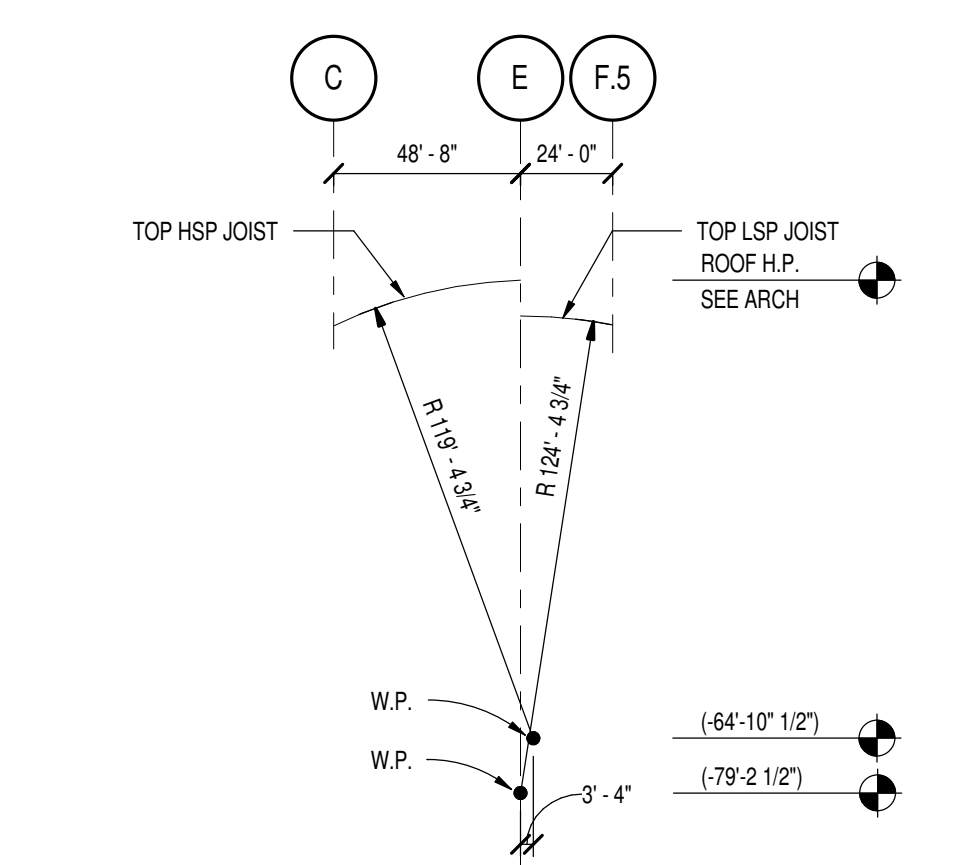
5 PROFILE AND LOAD DIAGRAM FOR ROOF JOIST LSP-3  
1/4" = 1'-0"

- NOTES FOR HSP & LSP JOIST LOADING SCHEDULES:**
- LIMIT JOIST LIVE LOAD DEFLECTION TO L/360.
  - LIMIT JOIST TOTAL LOAD DEFLECTION TO L/240.
  - DL = DEAD LOAD  
LL = LIVE LOAD  
WL = WIND LOAD
  - DL ON ENTIRE SPAN DOES NOT INCLUDE ROOF JOIST WEIGHT.
  - LOADS AND MOMENTS IN SCHEDULE ARE SERVICE (UNFACTORED) LOADS.
  - SEE PLANS FOR TRIBUTARY WIDTHS FOR JOIST VERTICAL LOADS.
  - SLOPED ROOF SNOW LOAD = 20 PSF (SERVICE).
  - ADDITIONAL SERVICE LOADS FOR HSP-8, 11, 13:  
ADDITIONAL SERVICE LOADS FOR LSP-3:  
325 P.L.F. DL  
400 P.L.F. LL  
300 P.L.F. WL DOWNWARD  
425 P.L.F. WL UPWARD  
APPLY ALONG ENTIRE LENGTH OF JOIST.
  - ADDITIONAL SERVICE LOADS FOR HSP-9, 10, 12:  
ADDITIONAL SERVICE LOADS FOR LSP-2A:  
50 P.L.F. DL  
80 P.L.F. LL  
125 P.L.F. WL DOWNWARD  
175 P.L.F. WL UPWARD  
APPLY ALONG ENTIRE LENGTH OF JOIST.
  - ADDITIONAL SERVICE LOAD FOR HSP-5:  
5 KIPS DL  
6 KIPS LL  
2 KIPS WL DOWNWARD  
5 KIPS WL UPWARD  
APPLY LOAD AT WORKPOINT 16'-8 3/4" NORTH OF GRIDLINE C.
  - ADDITIONAL SERVICE LOAD FOR HSP-6:  
10 KIPS DL  
12 KIPS LL  
4 KIPS WL DOWNWARD  
10 KIPS WL UPWARD  
APPLY LOAD AT WORKPOINT 16'-8 3/4" NORTH OF GRIDLINE C.
  - MOMENTS IN SCHEDULE INCLUDE EFFECT OF ADDITIONAL LOADS IN NOTES 8, 10 AND 11.
  - SEE 1 & 2/S-502 FOR ADDITIONAL TOP CHORD LOADS FOR JOISTS BEARING AT GRIDLINES C AND F.5.
  - JOISTS SHALL BE DESIGNED FOR THE MAXIMUM FORCE/MOMENT ENVELOPE FOR EACH MEMBER. DO NOT APPLY ALL LOAD CASES SIMULTANEOUSLY. USE CODE-PREScribed LOAD COMBINATIONS.
  - SUBMIT SIGNED & SEALED DESIGN CALCULATIONS FOR REVIEW & APPROVAL PRIOR TO FABRICATION OF JOISTS.

HSP JOISTS														
MARK	VERTICAL LOADS (PSF)								END MOMENTS (K-FT)					
	ENTIRE SPAN		COMPONENTS & CLADDING ROOF PRESSURE (WL)											
			A		B		C		LOW END			HIGH END		
	DL	LL	DOWN	UP	DOWN	UP	DOWN	UP	DL	LL	WL	DL	LL	WL
HSP-1	20	30	23	32	10	27	23	32	25	30	35	15	+20-10	30
HSP-2,2A	20	30	23	32	23	32	23	32	N/A	N/A	N/A	N/A	N/A	N/A
HSP-3	20	30	23	32	10	27	23	32	N/A	N/A	N/A	25	+30-5	20
HSP-4	20	30	23	32	10	27	23	32	30	35	25	N/A	N/A	N/A
HSP-5	20	30	23	32	10	27	23	32	45	50	30	30	+35-10	35
HSP-6	20	30	23	32	10	27	23	32	55	65	40	40	+50-10	35
HSP-7	20	30	N/A	N/A	10	27	23	32	N/A	N/A	N/A	N/A	N/A	N/A
HSP-8	-	-	-	-	-	-	-	-	65	80	60	45	+55-10	45
HSP-9	20	30	23	32	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HSP-10	20	30	23	32	23	32	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HSP-11	-	-	-	-	-	-	-	-	15	20	30	N/A	N/A	N/A
HSP-12	20	30	N/A	N/A	23	32	23	32	N/A	N/A	N/A	N/A	N/A	N/A
HSP-13	-	-	-	-	-	-	-	-	N/A	N/A	N/A	15	+20-5	35
HSP-14	20	30	23	32	-	-	-	-	20	20	40	10	+30-10	35
HSP-15	-	-	-	-	-	-	-	-	25	30	15	5	+20-5	25
HSP-16, 16A	20	30	23	32	-	-	-	-	N/A	N/A	N/A	N/A	N/A	N/A
HSP-17	-	-	-	-	-	-	-	-	20	20	10	5	+15-10	20

NOTE:  
HSP-8 NOT USED.

LSP JOISTS													
MARK	VERTICAL LOADS (PSF)						END MOMENTS (K-FT)						
	ENTIRE SPAN		COMPONENTS & CLADDING ROOF PRESSURE (WL)										
			D		E		LOW END			HIGH END			
	DL	LL	DOWN	UP	DOWN	UP	DL	LL	WL	DL	LL	WL	
LSP-1	20	30	10.5	28	24	37	25	30	45	10	+10/-15	30	
LSP-2,2A	20	30	24	37	24	37	N/A	N/A	N/A	N/A	N/A	N/A	
LSP-3	-	-	-	-	-	-	30	35	50	10	+20/-15	30	



ROOF JOIST PROFILE ELEVATION

- NOTES:
- REFERENCE ELEVATION AT FIRST FLOOR = 0'-0"
  - RADIUS IS TO TOP OF JOIST TOP CHORD.

**BROOKHAVEN NATIONAL LABORATORY**

UNDER CONTRACT WITH  
UNITED STATES DEPARTMENT OF ENERGY  
PLANT ENGINEERING DIVISION  
UPTON, NEW YORK 11973

JOB TITLE: INTERDISCIPLINARY SCIENCE BUILDING  
DWG. TITLE: ROOF JOIST PROFILES AND LOADING DIAGRAMS

SCALE: As indicated  
EISHG REK LEVEL: APPROVED BY: Approver

DATE: 04/09/10  
REVISED BY: MM  
JOB NO.: 079872  
BLDG. NO.:  
SHEET OF: 5-208